

EXHIBIT 2
[UNREDACTED VERSION OF
DOCUMENT SOUGHT TO BE SEALED]



Grenada SAD Approval 10/18/11

Grenada Core Team

Seagate Technology



Grenada SAD Approval Request

Grenada Core Team is presenting the following package for your approval for SAD release of the full family of Grenada drives utilizing only the BP4.5 22A HGA's. We present this request with only the exception of a potential material shortfall if Alphana 1D MBA WIP does not get requalified. Requalification in progress with cleanliness actions by the vendor and new PWM frequency, expected timeout 10/24 (risk decision)-10/31.

If you have any questions or concerns please contact Pat Dewey or a member of the Grenada Core Team.

Go Grenada!

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FED_SEAG0026840

Grenada Configuration

SAD Configuration:

- SAD Firmware - GR75.AW01AD.CCD4 and Servo 8B or greater (GR75.AW01AD.CCD4 and Servo 8B)
- Material: Customer base
 - PCO12.6 or greater
 - RHO: BP4.5 with 22A DLC
 - No Compart hook-ups, component not visible to the customers
 - No external bath processed HSA's, process not visible to the customers
 - Media: G5B or greater; No RMO Sputter SV615, SV616, until re-qual
 - Motor: Nidec, Alphana 2D & 3D, 1D after re-qualification
 - PreAmp: LSI, TI
 - Servo: McKinley XL ST, TI
 - DDR2: Winbound, Hynix, Samsung, Elite, Nanya
 - Material from the config plan
 - Korat, Wuxi, Suzhou



SLAM Milestone Assessment

7. Pilot		Product:		Grenada				
		Report Date:		10/13/2011				
Functional Organization	Deliverables	Criteria	Last Update	Current Status	Risk	Owner	Closure Date	Comments/Actions
1. Milestone Criteria	168-Hr DPPM Goal Achieved	<5K DPPM	10/14/2011	NA	Low Risk	Glen D Almgren		
	All contract items are within variance and projected to remain so		10/13/2011	Achieved	Low Risk			Reviewed with SMT 20 Sept, slide 27= Contract variances are: 1. Drive budget 45K over budget= 2. CTU declare date projected to 12 Oct 2011 +150days= 3. Gen2 declare was 18 Mar 2011 +90days
	Complexity Health Index - Does not deviate from Phase 0 Contract	A. CH Index Score = 90 against budget of 296 B. CC Budget = 80, forecast 54	04/21/2011	Achieved	Low Risk	John Mortellaro		complete
	Component sources defined on the SSP approved to AML level AB. Exceptions have defined/underpinned closure plans. Qualified Sources can support Master Schedule Requirements.	Need Alphana qualified for 1D MBS. Alphana DQ'd due to skip write failures in RDT3	10/17/2011	Potential shortfall to current MBS for 1D MBA!	Med Risk	Bob Kolanda/Mike Kepler		800K MBA's of 1D Alphana available contingent on requal effort in progress. Risk decision on 10/24 and 10/31. Retesting with CA's in progress 10/17.
	Exceptions to previous Phase Review closed		03/04/2011	Not Posted	No Risk Assigned			
	Factory Prime Yields meet Phase 0 goal=	Actual = 73% 1D, 59% 2D, 56% 3D, Goal 65% 1D	10/14/2011	Achieved	Low Risk	Kevin Stenvall		
	Firmware/Compatibility Testing Complete= - All High Risk items fix validated.		10/14/2011	Achieved	Low Risk	Matt Sadafi		
	Gen 2/3 Product Assurance and Factory Testing Complete= - All High Risk items fix validated.		10/14/2011	Achieved	Low Risk	Glen D Almgren		
	Integration DPPM Goal Achieved	Requirement 2k. Achieved 1.43k	10/14/2011	Achieved	Low Risk	Glen D Almgren		
	Inventory / Material Disposition= - Complete roll-up of all Factory and DC pre-SAD config inventory/WIP/FG and Disposition		10/03/2011	Achieved	Low Risk	Bob Kolanda		
	MTBF Goal Achieved	SAD = 250K, Actual = 248K	10/14/2011	Achieved	Low Risk	Glen D Almgren		MTBF Goal expected to meet 250K and 1K hours RDT3 10/17!
	Process Readiness Audit and Process Verification Test Results approved by the Volume Factory and Design Center.= - Includes QA Hardware/Software Readiness= - Includes Rework Qualification		04/27/2011	Achieved	Low Risk	Kevin Stenvall		
	Product Stewardship Declaration of Compliance at a minimum of 95% completed.		04/22/2011	Achieved	Low Risk	Bob Kolanda		
	SLAM Deliverables completed and entered into ADD/DD database		10/14/2011	In Progress	Low Risk	Pat Dewey	10/17/2011	MTBF

Grenada SAD Request

Product Name: Grenada

Approval Date: October 18 , 2011

Design Center: LCO

Goal: Authorizes Shipments of all configurations

Volume Factory: Korat, Wuxi, Suzhou

Configuration: 750G, 1TB, 1.5TB, 2.0TB, 2.5TB, 3.0TB SATA

Design Center Approval:

Pat Dewey

Pat Dewey

Core Team Lead

Brent VanDerVliet

Brent VanDerVliet

Exec Dir Prod Eng

Frank Murphy

Frank Murphy

Dir Reli

Mike Kepler

Mike Kepler

Exec Dir Materials

Geoff Gorbold for TM

Tom Major (acting)

SVP, PLM

Mike Foye

Mike Foye

Ex Dir, TCM

Val Lalonde

Val Lalonde

Sr. Dir Finance

Kian Fatt Chong

Kian Fatt Chong

VP Mfg

Jeff Mason

Jeff Mason

VP Design Engineering

Andy Davis

Andy Davis

SVP , LCO Design Engineering

John Gileci

John Gileci

SVP, Customer Advocacy

Exceptions Approval for CTU & SAD:

Andy Davis

Andy Davis

SVP , LCO Design Engineering

John Gileci

John Gileci

SVP, Customer Advocacy



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Grenada RDT 3/4		Updated: 10/17/11 12:00 AM							
AFR (1st year Weibull)	2.621%	From all fails Weibull MLE				1360	QTY TESTED		
MTBF (1st year Weibull)	90371.8					2400	POH/Year		
Minimum AFR:	0.039%	From zero fail Weibull @ 50% CL				0.6395018	Weibull Beta		
Total Number of Failures	47					953	Average Test Hours		
AFR for 1 failure	0.055%	AFR decrease per failure @ 100% fix effectiveness							
Issue	Corrective Action	Fix Validation	# of Failures	% Fail	Eff. Factors		Reduced AFR		PFL/ITF
SPPL-110: Skip Write Due to Contamination on Alphana-1D Configuration	SSO For Alphana 1Disk Configuration in place on 9/20	1D / Alphana SSO in place in the factory on 9/19	18	0.989%	100%	100%	1.687%	1.687%	PFL-2232#39,PFL-2231#823,PFL-2226#332,PFL-2305#630,PFL-2086#64,PFL-2016#160,PFL-2201#689,PFL-2114#436,PFL-2199#410,PFL-204#410,PFL-206#263,PFL-2034#189,PFL-2193#321,PFL-2157#553,PFL-2170#293,PFL-2092#373,PFL-2091#94,PFL-2224#726
SPPL-108: 20kHz Loop Instability due to Incorrect SNO & TAN	3 Code Fixes Planned: 1. TAN Improvements. 2. SNO Picks in the process 3. Broad notch between 18-22	Validation in process on 10 failures.	10	0.549%	100%	100%	2.126%	2.126%	PFL-2082#88,PFL-2081#245,PFL-2033#141,PFL-2057#190,PFL-2056#172,PFL-2024#74,PFL-2026#112,PFL-2014#80,PFL-2015#63,PFL-2309#918
SPPL-111: Degraded Head - RDT 3,4,5	3 of 4 Deg Heads have TA interaction. TA/Defect reduction plan in process with RMO. PFL2074: Combination Spec for TA Count + P_AFH_DH_BURNISH_CHECK - PCO 16.1 on wwl		5	0.275%	0%	40%	2.621%	2.511%	PFL-2314#887,PFL-2205#666,PFL-2074#265,PFL-2056#242,PFL-2195#577
SPPL-113: Particle Induced Media Damage	Improved General Cleanliness Actions and MQM change for Bode shake as part of particle sweep in CRT2 on 6 Head only.		3	0.165%	0%	20%	2.621%	2.588%	PFL-2127#412,PFL-2197#590,PFL-2002#73
SPPL-117: Skip Write - RDT 3/4/5	Skip Write Detect sensitivity adjustment. wwl4 for testing. One skip write easily caught with a negative burnish spec in cert. Discussing implementation. Particle Improvements for contamination related skip write		3	0.165%	0%	40%	2.621%	2.555%	PFL-2256#756,PFL-2159#535,PFL-2198#645
Modulation	FA In Process		1	0.055%	0%	0%	2.560%	2.568%	PFL-2322#755,PFL-2321#736
SPPL-116: SWOT - RDT 3/4/5	Servo code w#8C		2	0.101%	0%	80%	2.621%	2.533%	PFL-2061#176,PFL-2140#438
SPPL-105: Weak Write - Process Escape with PCO13 Not Reporting Data	Fix for PCO13 not reporting all heads in the IDSC2 Weak Write screen	Validated fix is in PCO 12.4	1	0.055%	100%	100%	2.566%	2.566%	PFL-1956#0
SPPL-109: Head Instability due to Interaction with FAFH Tracks	Remove FAFH Tracks in PCO 12.4	Drive Passed Retest. Head will go to RHO for further FA	1	0.055%	40%	40%	2.599%	2.599%	PFL-1999#31
SPPL-114: IOEDC due to incorrect VBM Index	New 'bread crumb' code developed to dump out ECC fields. Have not performed board swap piece (Winbond DRAM) Customer data not lost Drive is retesting with debug co		1	0.055%	0%	0%	2.621%	2.621%	PFL-2070#31
SPPL-118: Seek Timeout due to incorrect ACFF coeff during Single to Dual Stage Transition	Servo code w#8B that blends the Integrator value when transitioning from Single to Dual stage.	Validation on failures from RDT3/4/5	1	0.055%	90%	100%	2.571%	2.566%	PFL-2150#259
SPPL-119: Weak Write - RDT 3,4,5	YBAR by HMS Phase 4		1	0.055%	0%	40%	2.621%	2.599%	PFL-2137#452
Total Number of Fails		47	Reduced AFR :		0.95%	0.63%			
Corresponding MTBF :			251K		378K				

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DPPM Update

Grenada ODT Dppm

Sample Date	WW1201	WW1202	WW1203	WW1204	WW1205	WW1206	WW1207	WW1208	WW1209	WW1210	WW1211	WW1212	WW1213	WW1214
Qty Tested (Combined)	2841	4985	9563	3045	5459	4021	5063	5280	4354	2515	1751	2127	204	3596
No. of Failures	7	7	19	12	23	5	16	15	11	2	5	3	0	10
Weekly DPPM	2464	1404	1987	3941	4213	1243	3160	2841	2526	795	2856	1410	0	2781
4 Week MAV DPPM	3262	2939	2332	2202	2646	2671	3184	2976	2511	2556	2374	1954	1516	2344

Grenada ODT Dppm exclude Seek timeout from PCO12.4

Sample Date	WW1201	WW1202	WW1203	WW1204	WW1205	WW1206	WW1207	WW1208	WW1209	WW1210	WW1211	WW1212	WW1213	WW1214
Qty Tested (Combined)	2841	4985	9563	3045	5459	4021	5063	5280	4354	2515	1751	2127	204	3596
No. of Failures	7	7	19	12	23	5	16	15	11	2	5	3	0	3
Weekly DPPM	2464	1404	1987	3941	4213	1243	3160	2841	2526	795	2856	1410	0	834
4 Week MAV DPPM	3262	2939	2332	2202	2646	2671	3184	2976	2511	2556	2374	1954	1516	1433





Back up



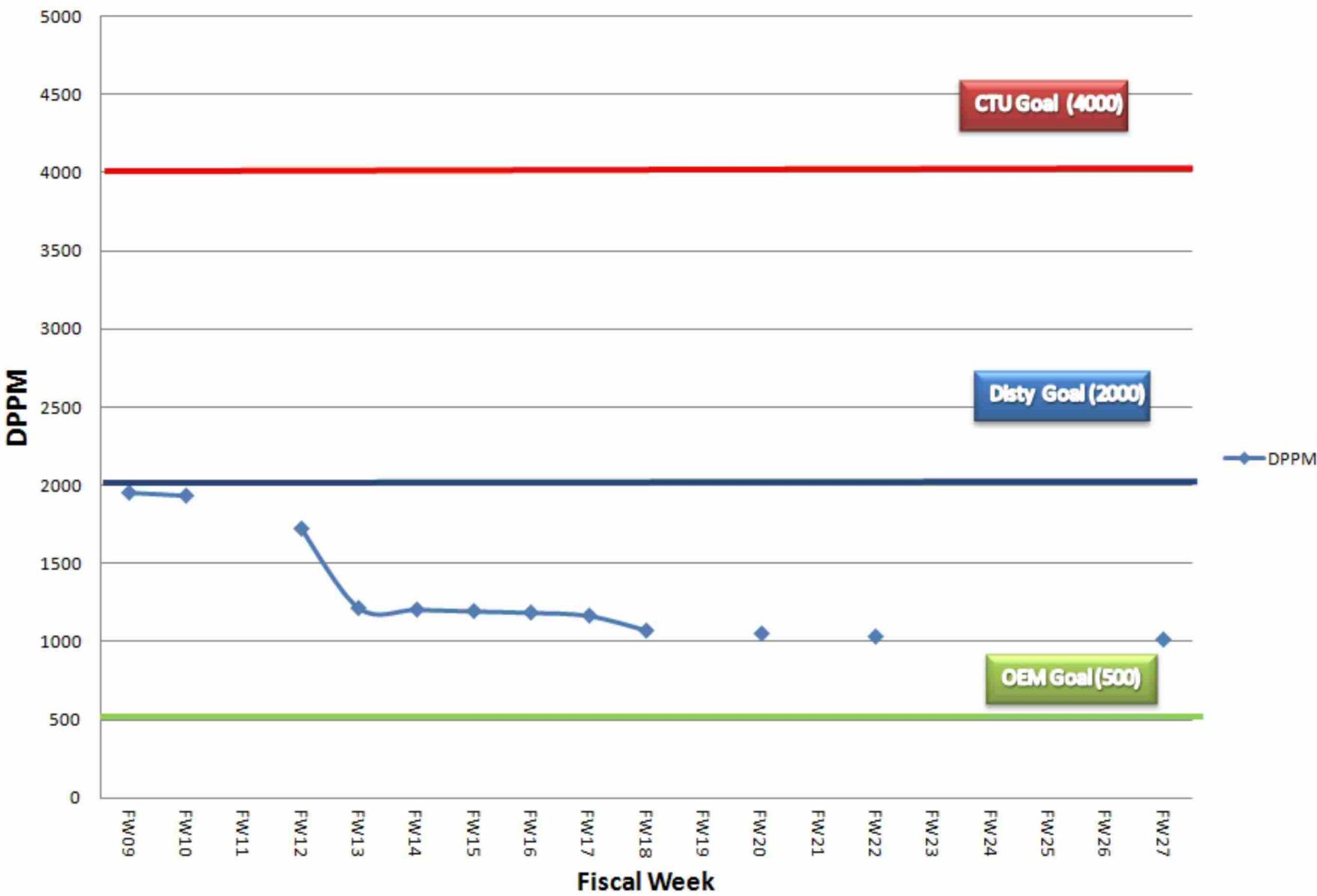
ODT DPPM improvement from PCO 9.8

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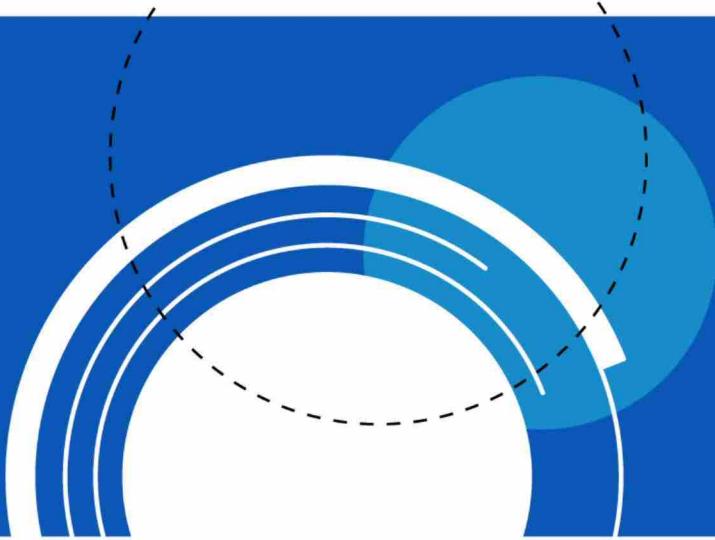
Failure mode	Number of failures/ DPPM	Improvement plan.	PCO	Champion	Prior	FW13	FW14	FW15	FW16	FW17	FW18	FW19	FW20	FW21	FW22	FW23	FW24	FW25	FW26	FW27
Modulation	5 / 465			Sandeep																
		1) Post process Skip write detect. Retry if modulation present	PCO12.4		FW10															
		2) 20Khz fixes SNO and TAN fix	PCO 14.1					418												
Weak Write	3 / 279			Krishnan																
		1) New HGA spec			FW12/ 25															
		2) New triplets	PCO 12.4+		FW10 /20															
		3) VBH4 with settling spec	PCO14.1+					209												
Skip Write	2 / 186			Core team			30													
		1) Remove Alphana 1D																		
		2) Moving the calibration to after ZAP in FNC2 may help a little	PCO14.1+	Koldewyn			33													
		3) Increasing the sensitivity since the last calibration change to prevent throughput issues lost some....		Koldewyn			30													
SWOT	2 / 186			David Olivero			0													
		Mechanical: SWOT sensor on PCCA																		
		External: revisit Shock sensor sensitivity																		
NTF	2 / 186						0													
Erasures	2 / 186																			
NMD	1 / 93	Particle Improvement		Scott Diets			9	9	9	9	9					9	9		9	
		1) Particle improvement plan		Scott Diets			10	10	10	10	10					10	10		10	
		2) Particle sweep on 50% of 6-hdrs	PCO14.2	Scott Diets																
		3) UDR (need improvement measurement, GIO script)		Glen A.																
EAW	1 / 93			Krishnan			0									93				
		New Spec	PCO 16																	
Sync Defect	1 / 93	Under investigation	TBD		Kelvin Mow		0													
RAM Miscompa	1 / 93						0													
Others	1 / 93	Under investigation	TBD				0													
Total DPPM	1954						1720	1215	1205	1195	1185	1166	1073		1054	1035			1016	

- EAW Spec change should catch this Failure, implementation date PCO 16.X 6 Wks out
- Sync_PLL Defect is being looked at By Kelvin Mao. TBD
- IOEDC: Board swap and retest with miss compare Beat-up. Try the IOEDC code. ECD FW14

CRT DPPM Progression per FW



Grenada RDT 3/4								Updated: 10/17/11 12:00 AM					
AFR (1st year Weibull)	2.621%	From all fails Weibull MLE				1360	QTY TESTED						
MTBF (1st year Weibull)	90371.8					2400	POH/Year						
Minimum AFR:	0.039%	From zero fail Weibull @ 50% CL				0.63955018	Weibull Beta						
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AFR for 1 failure	0.055%	AFR decrease per failure @ 100% fix effectiveness											
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SPPL-108: 20kHz Loop Instability due to Incorrect SNO & TAN	3 Code Fixes Planned: 1. TAN Improvements. 2. SNO Picks in the process 3. Broad notch between 18-22	Validation in process on 10 failures.	10	0.549%	100%	100%	1.687%	1.687%	PFL-2232/339,PFL-2231/823,PFL-2226/332,PFL-2205/680,PFL-2086/64,PFL-2016/160,PFL-2201/689,PFL-2114/436,PFL-2199/410,PFL-2064/10,PFL-2069/265,PFL-2034/189,PFL-2193/321,PFL-2157/553,PFL-2170/253,PFL-2092/273,PFL-2091/94,PFL-2321/736				
SPPL-111: Degraded Head - RDT 3,4,5	3 of 4 Deg Heads have TA interaction. TA/Defect reduction plan in process with FMO. PFL2074: Combination Spec for TA Count + P_AFH_DH_BURNISH_CHECK - PCO 16.1 on wv1	Cutin for TA Spec & Delta Burnish in PCO 16.2	5	0.275%	15%	40%	2.580%	2.511%	PFL-2314/887,PFL-2205/666,PFL-2074/265,PFL-2050/242,PFL-2195/577				
SPPL-113: Particle Induced Media Damage	Improved General Cleanliness Actions and MQM change for Bode shake as part of particle sweep in CRT2 on 6 Head only.		3	0.165%	0%	20%	2.621%	2.588%	PFL-2127/412,PFL-2197/590,PFL-2002/73				
SPPL-117: Skip Write - RDT 3/4/5	Skip Write Detect sensitivity adjustment. wv14 for testing. One skip write easily caught with a negative burnish spec in cert. Discussing implementation. Particle Improvements for contamination related skip write	Cutin for SWD sensitivity adjustment - PCO 16.2	3	0.165%	15%	40%	2.596%	2.555%	PFL-2256/756,PFL-2159/535,PFL-2199/645				
Modulation	FA In Process		1	0.055%	50%	50%	2.566%	2.566%	PFL-2322/755,PFL-2321/736				
SPPL-116: SVOT - RDT 3/4/5	Servo code xx8C		2	0.110%	0%	80%	2.621%	2.533%	PFL-2061/176,PFL-2148/438				
SPPL-105: Weak Write - Process Escape with PCO13 Not Reporting Data	Fix for PCO13 not reporting all heads in the IOSC2 Weak Write screen	Validated fix is in PCO 12.4	1	0.055%	100%	100%	2.566%	2.566%	PFL-1956/60				
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SPPL-114: IOEDC due to incorrect VBM Index	New 'bread crumb' code developed to dump out ECC fields. Have not performed board swap piece (winbond DRAM) Customer data not lost		1	0.055%	0%	0%	2.621%	2.621%	PFL-2070/31				
SPPL-118: Seek Timeout due to incorrect ACFF coeff during Single to Dual Stage Transition	Servo code xx8B that blends the integrator value when transitioning from Single to Dual stage.	Validation on failures from RDT3/4/5	1	0.055%	90%	100%	2.571%	2.566%	PFL-2150/259				
SPPL-119: Weak Write - RDT 3,4,5	VBAR by HMS Phase 4	VBAR/HMS Phase 4 - PCO16.2	1	0.055%	40%	40%	2.599%	2.599%	PFL-2137/452				
		Total Number of Fails	47			Reduced AFR :	0.87%	0.63%					
						Corresponding MTBF :	275K	378K					



Grenada Materials SAD Risk

October 03, 2011
Bob Kolanda



1D Alphana MBA / ID Skip Write

Alphana 1D MBA is on stop build due to ID skip writes seen in RDT3. Currently 10 failures, TTF ranges from ~60hrs to 550hrs.

Alphana Re qual activity based on higher amounts of hydrocarbons v Nidec resulting in a new cleaning process. Included is an improved VMI screening process @ the hub level

Drive build 10/07 (WW14), ECD risk approval WW18 earliest.

Supply at risk beginning WW19 based on latest Factory outlook. Team working with Nidec to provide demand coverage through calendar year end. Current gap is motor sub components, continuing to work with Nidec for improvement

Risk to proceed high based on current supply outlook and no actual root cause determination

Compart Re qual – SSO for 13.6khz issues seen in RDT2

3D Supply shortfall beginning FQ3'11

3D re qual build completed, yielded 166 v 225 required for qual bed. Not a Compart related failure

Top off builds and retest of failures underway

Pending results of the testing above, an RDT type qual would be staged to support a qual by mid December

1D and 2D qual - Completion estimated for Early January'12. No supply shortfall estimated as we are dual sourced on those models with Belton and FEL

EC11225 3D failure (CRRO) – Disc Spacer

4 leg DOE Completed. Results indicate little difference in yield between standard incoming and “no ding” screened. However, there is ~ 3% difference between Dufu and Global. Global being the better of the two. Dufu has been placed on stop build with Grenada pending discovery and resolution of the disparity. There is no supply shortfall based on Factory planner analysis of moving Dufu to Bogart and Muskie.

Next Steps include Root cause determination, improved VMI spec possibilities and mechanical change to edge radius

- **Note:** Evaluation is underway with Muskie at this time to determine any impact with Dufu. Results could influence overall supply picture
 - **Moderate Risk based on current inventory position**
 - **TI Preamp – 4ch and 6ch qualification for Mass Pro**
 - Qual in progress (RDT4). ECD qual timeout WW14
 - Currently 2 SWOT failures in the Bed under root cause investigation. Full approval gated by root cause determination
 - Supply coverage is currently 100% LSI through the end of this calendar year. Will re address supply capacity if required based on root cause
 - **Overall Recommendation** - Proceed to SAD and continue to expedite Re Qual activities on Critical items listed. Monitor supply outlook on Alphana and Compart through Qual.

Grenada 1D MBA Q2

WORK WEEK DATE	EOH	14 1-Oct	15 8-Oct	16 15-Oct	17 22-Oct	18 29-Oct	19 5-Nov	20 12-Nov	21 19-Nov	22 26-Nov	23 3-Dec	24 10-Dec	25 17-Dec	26 24-Dec	Q2 12
TOTAL INSERTION		6129	0	0	138269	202504	232536	280644	102438	201264	153821	147325	128479	109961	1703369 0
Nidec RAF Commit 9/16		0	0	0	40000	40000	40000	40000	40000	40000	40000	40000	40000	40000	380000
Nidec NCC Commit 9/16		7000	7000	7000	42000	42000	42000	42000	35000	35000	35000	70000	70000	35000	469000
Alphana Commit 9/12		0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Commit		7000	7000	7000	82000	82000	82000	82000	75000	75000	75000	110000	110000	55000	849000
BOH (HUB only)	231790	232661	239661	246661	190392	69888	-80648	-279292	-306730	-432994	-511815	-549140	-567619	-622579	
Inventory Level (Days)	264.71	#DIV/0!	#DIV/0!	12.49	6.58	2.10	-2.01	-19.09	-10.67	-19.70	-24.32	-29.92	-36.13	-16.92	

Bacall MBA Q2

WORK WEEK DATE	EOH	14 1-Oct	15 8-Oct	16 15-Oct	17 22-Oct	18 29-Oct	19 5-Nov	20 12-Nov	21 19-Nov	22 26-Nov	23 3-Dec	24 10-Dec	25 17-Dec	26 24-Dec	Q2 12
TOTAL INSERTION (With drives yield)		14926	21233	6717	11195	9702	8956	6090	4263	7917	2842	2842	2111	23916	122711
Nidec RAF Commit															0
Nidec NCC Commit		12000	18000	18000	18000	7000	7000	0	4000	4000	4000	4000	10000	10000	116000
Alphana Commit		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Commit		12000	18000	18000	18000	7000	7000	0	4000	4000	4000	4000	10000	10000	116000
BOH (HUB only)	7000	4074	841	12124	18929	16227	14271	8181	7918	4001	5159	6317	14206	289	
Inventory Level (Days)	2.31	1.34	0.88	7.58	13.66	12.68	16.40	13.43	7.00	9.85	12.71	20.94	4.16	0.07	

Alphana – Retest Plan

- Built a DOE of Alphana 1D MBA's and ST McKinley Servo ASIC
 - 200 Control 1D Alphana MBA with JCY base deck WW47 (RDT3)
 - PCO12.6 and run with current PWM 58KHz
 - 200 Clean 1D Alphana MBA with JCY base deck
 - PCO 12.6 half with PWM 58KHz and half with PWM 69KHz
 - 200 Clean 1D Alphana MBA with MMI base deck
 - PCO 12.6 run half with PWM 58KHz half with PWM 69KHz
 - 69KHz PWM code in cert checkout done looks fine
 - Drives testing in Suzhou 10/17 and decision pt 10/28
 - We now have TI version code in checkout as well.

1) BP4 / 20A : This is approved for SBS only with MTBF at 127K.

- S6 (Native) : 0.7M HGAs
- S5 (BtC) : 1.1M HGAs
- HSA : 34K - 2HD , 35K - 4HD , 29K - 5HD and 38K - 6HD

2) BP4.5 / 20A : This is approved for SBS only. There is no specific MTBF data on this material as only an interim plan for BP4.5/22A.

- S6 (Native) : 200K HGAs
- S5 (BtC) : 140K HGAs
- HSA : 2.7K-2HD , 0.3K-4HD , 0.4K-5HD and 1.2K-6HD

3) BP4.5 / 22A : Under qualification for Disty. MTBF as of Sep 27 (491-hr test time) is 185K validated (245K potential).

- 500-hr check point by W13/14 and 1000-hr by W16.
- Slider cut in 22A on Sep 9.
- Under material team to review for the Disty supply ramp plan with BP4.5/22A , est Sep 29 due to Teparuk shut down.

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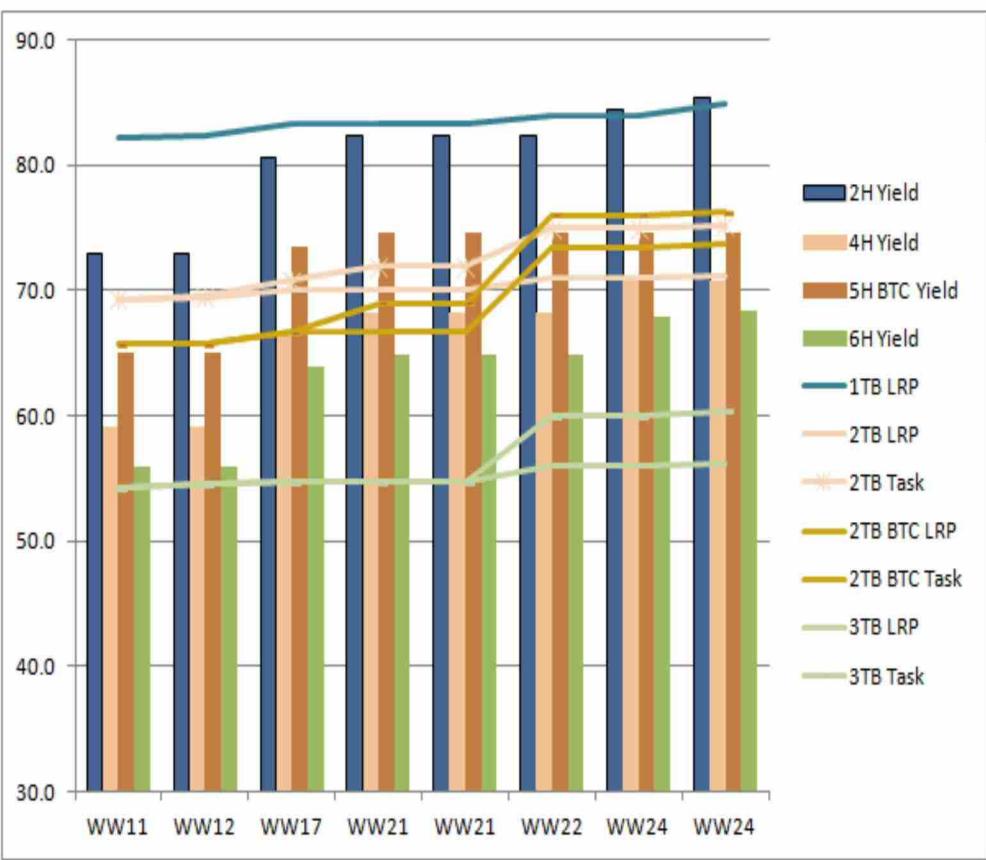
Seagate

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Grenada YIP Migration

BP 4.5 22A 100% Cut In Date Change

- Sort 6 WW25, Sort 5 WW24



	Q 1			Q 2							
	PCO12.3 BP4 20A DLC + 3D Waterfall Opti	PCO16 BP4 20A DLC MassPro Candidate	PCO17.0	PCO 12.4 Bug Fix	PCO16 BP4 20A DLC MassPro Candidate	PCO17.0	PCO 12.4 Bug Fix	BP4.5 HGA Spec Opti BTC	BP4.5 22A DLC (WW23 BTC)	BP4.5 HGA Spec Opti Native	BP4.5 22A DLC (WW17 Native)
MassPro	WW11	WW12	WW17	WW21	WW21	WW24	WW24	WW25	WW25	WW25	WW25
2H Yield Gain	2.9			7.6	1.8					2.0	1.0
4H Yield Gain	4.1			7.4	1.8					2.5	0.0
5H BTC Yield Gain	6.1			8.5	1.1					0.0	0.0
6H Yield Gain	9.7			7.9	1.1					3.0	0.5
	WW11	WW12	WW17	WW21	WW21	WW24	WW24	WW25	WW25	WW25	WW25
2H Yield	73.0	73.0	80.6	82.4	82.4	82.4	84.4	85.4			
1TB LRP	82.2	82.4	83.4	83.4	83.4	84.0	84.0	84.9			
4H Yield	59.1	59.1	66.5	68.3	68.3	68.3	70.8	70.8			
2TB LRP	69.2	69.4	70.0	70.0	70.0	71.0	71.0	71.2			
2TB Task	69.3	69.6	70.8	72.0	72.0	75.0	75.0	75.2			
5H BTC Yield	65.1	65.1	73.6	74.7	74.7	74.7	74.7	74.7			
2TB BTC LRP	65.7	65.7	66.7	66.7	66.7	73.5	73.5	73.7			
2TB BTC Task	65.7	65.7	66.7	69.0	69.0	76.0	76.0	76.3			
6H Yield	56.0	56.0	63.9	65.0	65.0	65.0	68.0	68.5			
3TB LRP	54.2	54.5	54.7	54.7	54.7	56.0	56.0	56.2			
3TB Task	54.2	54.5	54.7	54.7	54.7	60	60	60.4			
Meeting Current LRP											

Task - Yield Goal Increase



- 2TB meets LRP WW36
- PCO 12.3 yield is baseline.
- PCO 16 target release WW14, cut in MassPro WW17.

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Grenada Test Time

	PCO 9.8	PCO 12.6A	PCO 16.1	PCO 17	PCO 18	PCO 19
Action / WW	N	14	17	21	25	29
1TB Actual TT w/o MQM	46.3	43.2	42.2			
1TB Actual TT w/MQM	50.7	47.2	46.2			
1TB Actual SP	44.2	38.1	37.9			
1TB Actual IP	2.1	5.1	4.3			
1TB Actual IP MQM	4.4	4.0	4.0			
1TB LRP IP	1.6	1.6	1.6	1.6	1.5	1.5
1TB LRP SP	38	38	38	38	36.2	36.2
DELTA LRP	6.7	3.6	2.6			

	PCO 9.8	PCO 12.6A	PCO 16.1	PCO 17	PCO 18	PCO 19
Action / WW	N	14	17	21	25	29
2TB Actual TT w/o MQM	82.2		82.8			
2TB Actual TT w/MQM	88.8		90.0			
2TB Actual SP	78.9		77.6			
2TB Actual IP	3.3		5.2			
2TB Actual IP MQM	6.6		7.2			
2TB LRP IP	2.0	2.0	2.0	2.0	1.9	1.9
2TB LRP SP	73.2	73.2	73.2	73.2	69.7	69.7
DELTA LRP	7.0		7.6			

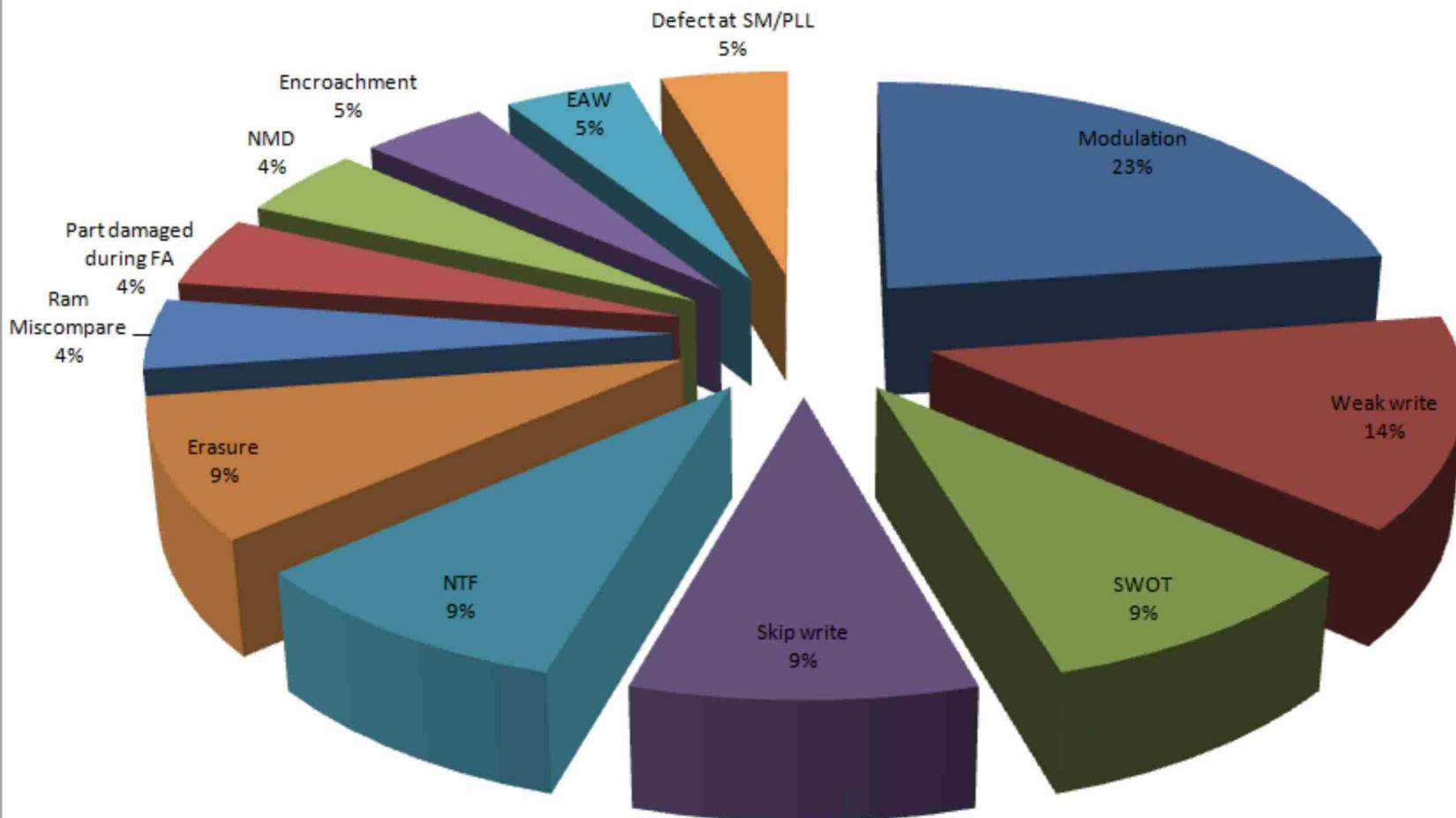
	PCO 9.8	PCO 12.6A	PCO 16.1	PCO 17	PCO 18	PCO 19
Action / WW	N	14	17	21	25	29
2TB 5HD Actual TT w/o MQM	101.7	95.6				
2TB Actual TT w/MQM	108.7	103.0				
2TB 5HD Actual SP	97.8	89.4				
2TB 5HD Actual IP	3.9	6.2				
2TB BTC Actual IP MQM	7.0	7.4				
2TB BTC LRP IP	2.2	2.2	2.2	2.2	2.1	2.1
2TB 5HD LRP SP	83.9	83.9	83.9	83.9	79.9	79.9
DELTA LRP	15.6	9.5				

	PCO 9.8	PCO 12.6A	PCO 16.1	PCO 17	PCO 18	PCO 19
Action / WW	N	14	17	21	25	29
3TB Actual TT w/o MQM	132.8	119.1				
3TB Actual TT w/MQM	139.6	128.2				
3TB Actual SP	129.3	112.1				
3TB Actual IP	3.5	7.0				
3TB Actual IP MQM	6.8	9.1				
3TB LRP IP	2.4	2.4	2.4	2.4	2.3	2.3
3TB LRP SP	108.4	108.4	108.4	108.4	103.2	103.2
DELTA LRP	22.0	8.3				

PCO 17 Test time Reduction will be underpinned 10/12.

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Cleanliness Timeline

		Sept				Oct				Nov				Dec				Jan				
		FW10	FW11	FW12	FW13	FW14	FW15	FW16	FW17	FW18	FW19	FW20	FW21	FW22	FW23	FW24	FW25	FW26	FW27	FW28	FW29	FW30
Improvements post RDT3																						
Components																						
Slider										X	X											
192 KHz post DEB Airknife																						
Post SFAVI Tooltek+No SA superheat+IPA Texwipe/HTC tray cleaning							X															
Auto 192 KHz.								X														
HGA																						
Pneumatic exhaust release to facility/Vacuum cleaning nozzle for FOLA/BOLA		tbd																				
Auto cleaning for SLA pre-align gripper and mount finger		tbd																				
Non-ABS clamping at TIC		tbd																				
HSA (Rapeepat)																						
Expandable spacer key (80% tape test)																						
Tolerance ring install									X													
HAS Workstation cleaning frequency																						
Dip clean to end of process		tbd								X												
Media																						
Desaru media calc.. Do we have it, Candella..																						
MBA cleanliness spec																						
Would need new drawing, and re-quote																						
Assembly/Factory																						
Parts																						
Clean room paper process!!!										X												
MonocastSpacer cleaning rack										K, S, W												
FOF																						
Pad (spec revision/review)																						
RT-PAD (improved detection and sample rate)										K.S. confirm Wx		1D		K,W	S							
PAD sampling rate to 1%											X											
Add stopper to Qcover (SST3xx and A1) (Sz and Wx in RDT3, Korat new)												K,S										
Weekly cleaning for RPI station (ramp rotate)												K										
Clover leaf. Lots of particles at disk loader (SST)												W	S							K		
Design																						
header connector cover																						
Test Process																						
MQM																						
MantaRay Particle Agitation																						
implemented																						
planned																						
not planned																						

Complexity Matrix – PSG Grenada

Grenada Customer and Internal Restriction Matrix

Customer		HP	Dell	Lenovo	Apple	STD OEM	SBS	Disty
FY12 Volume								
Balance Control		FBP1<12.5			1D:FBP2<14.0 2D: FBP2<21.0			
PCBA	Chip							
	Type	RVFF						
HSA	NHK/MPT Suspension							
	Sort /head type							
	TI / LSI Preamp							
Media								
MBA								
Customer Special Test		10G screen, 1M0s	Dell PPID		Blue run test ATI test (7hrs/Disc)	Dell PPID		
Cover								
GOTF		OEM	OEM	OEM	OEM	OEM		
Mfg Site					No Suz			
F3 Code		HP01	CCD4	CCD6	AP01	CCD4	CCD9	CCD4
Labels	Drive Label							
	Case Label							
Others					2TB 4H HDA only			

Remark:

- No restriction on this part
- Customer restriction on this part
- Seagate restriction on this part (without action)
- Seagate restriction on this part (with action)

Potential future Risks:

1. Fuji media FQ2'12 to BP FQ4'12
2. TDK heads disty only FQ3'12 to BP FQ4'12
3. Sony screen to meet DPPM if required

Opportunities: Move SBS to CCD4, current issue is thermal limits with CCD4 JIT mode

Grenada Complexity Health Assessment

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CC Summary		
Actual	0	
Budget	80	Commit at Phase 0
Forecast	54	Current Forecast
Delta	26	Budget minus Forecast
CH Index Summary		
Actual	0	
Budget	296	Commit at Phase 0
Forecast	90	Current Forecast
Delta	206	Budget minus Forecast
CH Ratio Summary		
Actual	0.00	
Budget	3.70	Commit at Phase 0
Forecast	1.67	Current Forecast
Delta	2.03	Budget minus Forecast

BASE CONFIGURATIONS				
Capacity	Cache	Interface	Configs	
3000	1	1	1	
2500	1	1	1	
2000	1	1	1	
1500	1	1	1	
1000	1	1	1	
750	1	1	1	
				6 Standard Tabs

Configuration Driver Report	Total
Base Number of Configurations: SBS	6
Customer Unique Code Apple, HP, Dell, Lenovo,	24
Customer Unique Labeling: Std OEM. Japanese OEMs	12
Disty: Seagate/ Maxtor	12
Total Configurations	54

Risks:

- NEC, Sony and Samsung dppm and FW changes that could occur during qualification
- Dell on Std OEM at launch, FW improvements learned during qualification



Grenada Restrictions Report

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Current Restriction Report

Restriction Category	Restriction Detail	Reason Category	Qty of Restr	Weight	CC's Affected	CHI Score	Action	Owner			
HDA Restriction		Customer Unique Requirement	0	7	0	0	Top cover damper not on Disty and SBS for cost savings	NA			
HDA Restriction		To Meet Customer Quality Requirements	0	7	12	0	Top cover damper not on Disty and SBS for cost savings	NA			
PCBA Restriction		Implement Cost Savings	0	3	12	0	Non-LH PCBA for cost savings on Disty and SBS	NA			
PCBA Restriction		Customer Unique Requirement	0	3	0	0		NA			
PCBA Restriction		To Meet Customer Quality Requirements	0	3	0	0		NA			
PCBA Restriction		Customer Unique Requirement	0	3	0	0		NA			
PCBA Restriction		Customer Unique Requirement	0	3	0	0		NA			
Test Screen Restriction	Apple requires Blue Nun test	Customer Unique Requirement	1	3	12	36	None	NA			
Test Screen Restriction	Apple require full pack zero pattern format	Customer Unique Requirement	1	3	12	36	None	NA			
Test Screen Restriction	HP 20M Zeros 1st and last	Customer Unique Requirement	1	3	6	18	None	NA			
Top Cover Restriction		Customer Unique Requirement	0	7	0	0		NA			
Test Screen Restriction		Customer Unique Requirement	0	3	0	0		NA			
Total Active CCs		54	Complexity Health Index		90						
Total CCs affected		54	Complexity Health Ratio		1.67						
Unrestricted CCs		0									
Total Restrictions		3									
Closed Restrictions		0									
Restrictions with closure plan		0									
Restrictions that require closure plan		0									
Non-Closeable due to Customer/Marketing Requirement		3									
Non-Closeable due to Cost Savings / Other		0									



PFL	TTF	Issue	PFL Cnt	Hds	Build Site	Test Site	Status	Drive Location	RC Investigation / Corrective Actions	CA Cut-in Date	Responsible
2014	80	20KHz Servo Resonance	10	4	WUX	SUZ	Multiple skipped tracks due to dVGAS and 22KHz in PES. Many seek errors to head 1 and NRRO vibration detect messages. Bode plots show that Servo notch is not centered over resonance mode at 21KHz. SNO peak detect set-up issue that detects the Max rather than the	SUZ Retest (316 hrs)	1. Broad notch servo code running in retest on 9 failures in Suzhou reli - SFW8A in PCO14.x targeting Tier 2 CTUs. 2. SFW89 has PF3 SNO fix and TAN change in PCO14.1	WW13	Bill Ray / Sandeep Sequeira
2015	63			4	WUX	SUZ	SUZ Retest (316 hrs)				
2024	74			5	TTK	SUZ	SUZ Retest (320 hrs)				
2026	111			4	WUX	SUZ	SUZ Retest (316 hrs)				
2033	140			5	TTK	SUZ	SUZ Retest (318 hrs)				
2056	172			5	TTK	SUZ	SUZ Retest (291 hrs)				
2057	190			5	TTK	SUZ	SUZ Retest (291 hrs)				
2081	245			5	TTK	SUZ	SUZ Retest (200 hrs)				
2016	160	ID Skip Write (Multi-Rev Offtrack Writes)	16	2	SUZ	SUZ	H0/H1 Extreme ID. Same symptoms and emap modulation signature at extreme ID seen on other PFLs (PFLs 1923, 2027), all with Alphana MBA (LR). Investigation in progress.	LCO CIL	Stop Ship issued for Alphana Motor Base. Planning a 100 drive Grenada Clean Hub check out in reli test.	WW12	Scott Deits / Kevin Gorgen
2034	189			2	SUZ	SUZ	LCO HMM				
2060	268			2	SUZ	SUZ	LCO HMM				
2064	10.4			2	WUX	TTK	LCO HMM				
2086	63			2	SUZ	TTK	LCO 9/22				
2091	94			2	WUX	TTK	LCO HMM				
2092	373			2	SUZ	SUZ	LCO HME				
2114	435			2	SUZ	SUZ	LCO SVO				
2157	552			2	SUZ	SUZ	LCO 10/14				
2159	534	MD Skip Write	1	4	TTK	SUZ	2159 - H2 Zone B. Modulation in emap. OTF sags in the MD area. Cert data shows this to be a clearance outlier from AFH2 to AFH3 Clearance loss of >10A. Teardown shows no interaction on disc. Head in SEM analysis ECD 10/11	LCO HMM	Possible cert screen analysis pending physical FA.	TBD	Scott Deits / Kevin Gorgen
2102	14			6	TTK	LCO	RHO FA	2102 -Hydrocarbons identified on CP TE - exact source undetermined. Basedeck and disc wash in process ECD 10/11 2198 - New Failure. In shipment to LCO. 2256 - New Failure. In shipment to LCO.	TBD	Scott Deits / Kevin Gorgen	
2198	645	Skip Write	3	4	TTK	SUZ	LCO 10/10				
2256	755			6	TTK	SUZ	LCO 10/17				

Still running.

DOE in progress to potentially clear inventory: Alphana clean hubs, standard, and new PWM.

Deits 4-UP. Able to screen with <1% yield loss, looking for further efficiencies. 10A negative burnish. Talc on AAB. **Particle improvement.**

Deits 4-UP. Alphana non - 1D skip writes. 2 of 3 are at ID somewhat similar to the 1D.

2137	451	Weak Write	1	3	TTK	SUZ	2137 H1 at OD. Nidec MBA. On bench, duplicate error at BBM 3/10 with Y1 full retry. Error written over in MSD check. Similar errors show media once-around issue. Reprocess drive with PCO 16 to validate VBAR by HMS.	LCO HME	CA Identified: VBAR by HMS phase 4 in PCO16. Drive being reprocessed with PCO16 to validate.	TBD	Scott Deits / Krishnan
2058	242	Degraded Head	4	6	SUZ	SUZ	2058 - H2 amplitude increased and high asymmetry change since cert and BER degraded. Non-resettable. Small amount of burnish on reader. 2074 - H2 amplitude decrease and BER degraded MR resistance. increase 80 ohms. Over 500 sev 2 TAs on S2. DLC completely worn off. ISI looked okay. 2195 - Sudden degradation on H1. Amplitude doubled and asymmetry increased. Running QST and Hd Instability test. Shipping to LCO. 2205 - MR resistance H0 degraded at 400 hrs into test.	LCO CIL	PFL-2074 CA Identified: Combo Spec between DELTA_BURNISH_CHECK and Total TA's. Option to ADG head, depop and reprocess.	TBD	Scott Deits
2074	265			4	WUX	SUZ		LCO CIL			
2195	577			4	TTK	TTK		LCO 10/10			
2205	665			2	TTK	SUZ		SUZ FA			
2099	30	OD Skip Write	2	5	TTK	LCO	2099 - 20KHz modulation. Nidec MB. Re-calibration picked lower dvgas threshold in the zone with the skip write. Drive being reprocessed to check SWD at FNC2 and to recheck SWD sensitivity. ECD 10/10 2101 - Nidec MB. Disc showed lots of evidence of HDI at OD. Lube moguling at OD and ID.	LCO HMM	2099 - SWD moving to FNC2 after ZAP in PCO14.1 2101 - PIDs on failing surface. CA from RHO slider pending.	TBD	Scott Deits / Kevin Gorgen
2101	7			3	TTK	LCO		LCO CIL			
2002	73	Particle/Contam Induced Media Defect	3	6	WUX	SUZ	2002 NMD - Failed during clean up for UDE after power interruption. Emap shows 2 track particle scratch. CIL found head to be clean. 2127 Erasure - Multitrack erasure on H0 zone 16. No MSD signature. In LCO teardown - preliminary teardown results expected 9/30 2197 MSD - Multitrack scratch on H1 zone 1. Checking cert data for head degradation.	LCO CIL	Improved General Cleanliness Actions and MQM change for Bode shake as part of particle sweep in CRT2 on 6 Head only.	TBD	Scott Deits / Kevin Gorgen
2127	411			2	TTK	SUZ		LCO CIL			
2197	590			6	TTK	SUZ		LCO 10/10			
2104	80			2	TTK	LCO	2104 - Slight media defect on H1. M...	LCO S...	L...	TBD	Bill ...

In cert for vbar/hms4 capture analysis. New picks de-stress head. **PCO 16.1.**

Deits 4-UP. (1) captured by cert process. **PCO 16.1.**

Deits 4-UP. One drive in re-process, showed that sensitivity improved with calibration in FNC2. 2101 - PID. Pending. **PCO 16.1.**

Particle Improvement plan in **ongoing** update mode..

2104 2150	80 259		2 2	TTK WUX	LCO TTK	2104 - Seek errors on H0 and H1. No issues on bench at ambient. Investigation focusing on (1) 900Hz resonance that persists for 2 or more revs - thought to be pivot/flex mode. In Speaker Vibe beat up test to duplicate. 2150 - Failed seeks on H0. Bode plots okay. 10/10 Retesting in Reli.	LCO Servo LCO Servo	In FA process. Drives in beat up to duplicate before flashing servo code changes in 8B. (1) ACFF off until settle, (2) Single stage to dual stage blend during settle process.	TBD	Bill Ray / Sandeep Sequeira		
2061 2148	176 438		4 4	TTK TTK	TTK	UDS shows a large > 40% offtrack write fault at time of error immediately following a shock sensor event. Shock-induced encroachments on bench showed no anomaly. Attempting to duplicate error by writing adjacent track (Servo Engr).	LCO Servo LCO Servo	In FA process.	TBD	Dave Olivero / Sandeep Sequeira		
2100	31	ABS Modulation	1	5	TTK	LCO	300 KHz modulation on H3 zone 12. 9/29 started Retest	LCO Retest (97 hrs)	Improved General Cleanliness Actions and MQM change for Bode shake as part of particle sweep in CRT2 on 6 Head only	TBD	Scott Deits	
1999	30	Head Instability	1	5	TTK	SUZ	Failed during clean up for UDE after power interruption. QST indicates H1 unstable. Errors caused by low freq pattern in adjacent FAFH track and head sensitivity. FAFH tracks overwritten to simulate removal. Drive passed subsequent reli clean up and is in retest in RDT. Head shipped to RHO for FA on 9/30.	LCO Retest passed (stopped at 104 hrs)	FAFH tracks removed in PCO14.1	WW13	Krishnan Subramanian	
2070	30	IOEDC Error	1	2	WUX	TTK	Fails for timeout/IOEDC because of exhausting retries in the search for the bad IOECC block. Drive failed again in retest with new IOECC fixed code. Logs indicate a multibit error that can not be corrected. Winbond DDR. Retesting in LCO reli with debug code generated to display buffer data of bad sector (Ed Fong).	LCO Retest (66 hrs)	Retested in 9 hours with new IOECC fixed code AAA900. Logs indicate that it is an uncorrectable multibit error.	TBD	Pat Vincent-Adams / John Shaw	
1956	0.015	Weak Write - Process Escape	1	2	SUZ	SUZ	Drive certed with PCO 13 did not have IDSC2 Weak Write Screen.	LCO HME	IDSC2 Weak Write screen in PCO 12.3	WW10	Steve Arnold	
Total 48												

With Servo, seeing some 900 hz on seek settle. New servo code blends SS to DS better, and activates ACFF after settle complete. PCO 16.1?

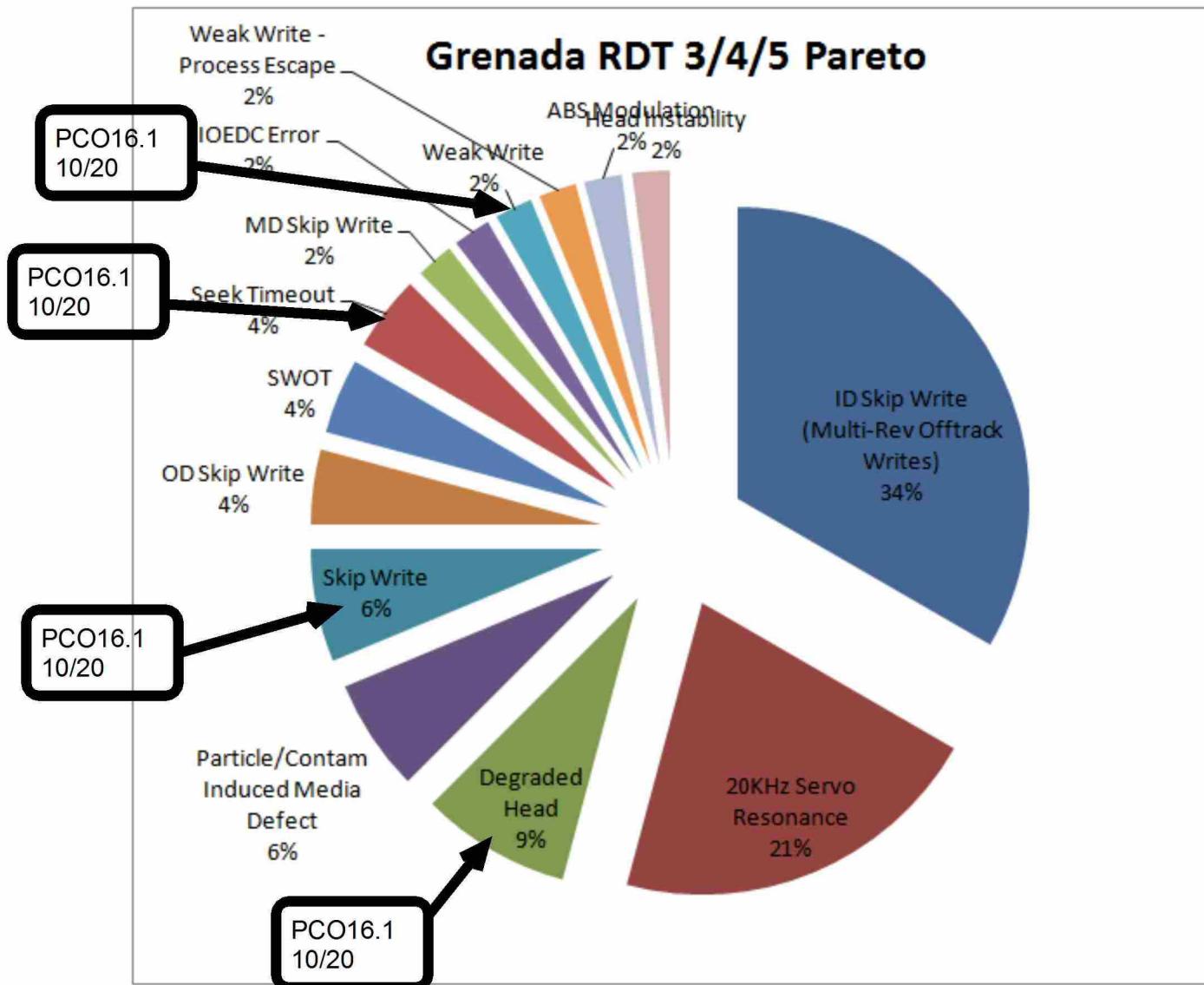
Under re-classification. Believe these are not 'mechanical pop' symptom. Moving to Deits, probably just re-run.

To teardown.

Ed Fong has drive.

New failure, 30 second seek timeout. Head suddenly goes unstable. Need more F/A.

MTBF Pie Chart



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